

connected to a channel select circuit 4 which, through the use of logic gates and addressing signals, selects one LD in the LD array to transmit an optical signal carrying data (Col. 3, lines 31-45). Each LD is assigned to a specific destination (i.e., via a specific optical fiber) (Col. 2, lines 63-67), and data to be transmitted is input through the data channel coupled to the channel select unit (Col. 3, lines 37-40).

B. Discussion of McCarthy

McCarthy is related to an optical data communication system for communications between a control station and a plurality of remote stations (Abstract). Each remote station has a transmitting opto-isolator device, which includes an LED to transmit an optical signal (Col. 2, lines 60-67).

C. Claim 1

The Office Action alleges that the combination of Araki and McCarthy discloses all limitations of claim 1. The Office Action concedes that Araki fails to disclose that light sources are LEDs, but then relies on McCarthy for its disclosure of LEDs. Applicants do not agree that Araki discloses all claim elements except for LEDs and, as such, the combination of Araki and McCarthy still fails to teach or suggest all limitations of claim 1.

MPEP §2143 lists several examples of rationales that may be used to establish a *prima facie* case of obviousness (i.e., combining prior art elements according to known methods to yield predictable results, simple substitution of one known element for another to obtain predictable results, etc.). The Office Action appears to rely on the first rationale, "(A) combining prior art elements according to known methods to yield predictable results," in support of the assertion that claims 1-16 are rendered obvious by Araki and McCarthy.

MPEP §2143(A) describes in detail the requirements for rejecting a claim based on this rationale. This section of the MPEP states that the Office Action **must** articulate, *inter alia*, the following: (1) a finding that the prior art included each element claimed, although not necessarily

in a single prior art reference, **with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements** in a single prior art reference.

The Office Action has failed to establish a *prima facie* case of obviousness, as the first requirement set forth in MPEP §2143(A) clearly is not met. Specifically, the Office Action fails to establish that the prior art includes each claimed element recited in claim 1.

The Office Action contends that Araki teaches a LD driver operable to provide a control signal and an electronic switch in electrical communication with the LD driver to receive the control signal. The Examiner refers to Araki's channel select circuit 4 as allegedly corresponding to the electronic switch recited in claim 1, and Araki's LD driver unit 3 as allegedly corresponding to the LED driver recited in claim 1. However, as can be seen in Araki's Fig. 4, in contrast to the Office Action's assertions, the LD driver in Araki *receives* a control signal from the channel select circuit; more specifically Araki's LD driver does not provide a control signal and a plurality of currents, and Araki's channel select circuit does not receive a control signal. Therefore, Araki fails to teach or suggest "a LED driver operable to provide a control signal and a plurality of LED currents," and "an electronic switch in electrical communication with said LED driver to receive the control signal," as recited in Applicant's claim 1. McCarthy similarly fails to disclose or suggest these limitations.

In view of the foregoing, Applicant respectfully submits that Araki and McCarthy, considered alone or in combination, fail to teach or suggest multiple limitations of Applicant's claim 1. Accordingly, claim 1 patentably distinguishes over Araki and McCarthy, considered alone or in combination, and withdrawal of the rejection of claim 1 is respectfully requested.

Claims 2-14 depend from claim 1 and are patentable based at least upon their dependency.

D. Claim 15

Claim 15 recites "a method of operating a LED system for illumination and data transmission, said method comprising: transitioning the LED system between a first illumination state and a second illumination state, wherein the first illumination state includes a first transmission of a first light output, and the second illumination state includes the first transmission

of the first light output and a second transmission of a second light output; optically communicating a first data bit upon each transition of the LED system from the first illumination state to the second illumination state; and optically communicating a second data bit upon each transition of the LED system from the second illumination state to the first illumination state.”

The Office Action alleges that the combination of Araki and McCarthy discloses all limitations of claim 15. In particular, the Office Action contends that Araki can select more than one LD light source at a time to transmit light signals. The Office Action further contends that a first LD light source that transmits light output is representative of a first illumination state and a second illumination state is represented when a second light source and the first LD light source transmit light outputs.

Applicants respectfully disagree, at least because Araki teaches the selection of only one LD light source at a time. As can clearly be noted in Fig. 4, the channel select unit, due to the use of NAND logic gates, only selects one LD at a time to output a light signal. Furthermore, the following paragraph in Col. 5, lines 9-15 of Araki clearly states that Araki is related to selecting only one LD at a time for emitting an optical signal.

“In summary, it will be seen that the present invention provides an optical transmitter capable of selecting, in response to address signals, one LD to emit an optical signal out of an array of LDs. This prevents the other or unselected LDs from consuming power and thereby obviates an increase in power consumption ascribable to an increase in the number of channels.”

One of ordinary skill in the art would readily appreciate that Araki is not capable of having two LD light sources output light signals at the same time; accordingly, Araki fails to teach or suggest having a first illumination state and a second illumination state, as recited in claim 15.

Even if one were to consider as accurate the Office Action’s assertion that Araki teaches selection of multiple light sources, the Office Action nonetheless fails to note that Araki teaches that each LD light source is assigned to a specific destination (Col. 2, lines 63-67). In Araki, each selected light source outputs an optical signal to a different destination. Thus, the output of one LD light source is unrelated to the output of another LD light source because the destinations of

the respective outputs are different. Transmission of bits to the first or second destination in Araki depend on the data bit and control signal from the channel select unit, and is not in any way related to a transition between the first and second illumination states as alleged by the Office Action.

Accordingly, one of ordinary skill in the art would readily appreciate that Araki fails to teach or suggest “optically communicating a first data bit upon each transition of the LED system from the first illumination state to the second illumination state; and optically communicating a second data bit upon each transition of the LED system from the second illumination state to the first illumination state,” as recited in claim 15. McCarthy does not cure this deficiency.

In view of the foregoing, Applicants respectfully submit that claim 15 patentably distinguishes over Araki and McCarthy, considered alone or in combination, and is in condition for allowance. Accordingly, withdrawal of the rejection of claim 15 is respectfully requested.

E. Claim 16

Claim 16 recites “a LED system for illumination and data transmission, said LED system comprising: means for transitioning between a first illumination state and a second illumination state, wherein the first illumination state includes a first transmission of a first light output, and the second illumination state includes the first transmission of the first light output and a second transmission of a second light output; means for optically communicating a first data bit upon each transition of the LED system from the first illumination state to the second illumination state; and means for optically communicating a second data bit upon each transition of the LED system from the second illumination state to the first illumination state.”

The Office Action rejected claim 16 for reasons similar to those used to reject claim 15. Accordingly, Applicants argument above in favor of the patentability of claim 15 applies similarly to claim 16.

Accordingly, withdrawal of the rejection of claim 16 is respectfully requested.

III. Comments on Dependent Claims

Since each of the dependent claims depends from a base claim that is believed to be in condition for allowance, Applicant believes that it is unnecessary at this time to argue the allowability of each of the dependent claims individually. Applicant does not, however, necessarily concur with the interpretation of any dependent claim as set forth in the Office Action, nor does the Applicant concur that the basis for the rejection of any dependent claim is proper. Therefore, Applicant reserves the right to specifically address the patentability of the dependent claims in the future, if deemed necessary.

CONCLUSION

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue, or comment set forth in the Office Action does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Furthermore, nothing in this paper should be construed as intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify any concession of unpatentability of the claim prior to its amendment.

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicants' representative at the telephone number indicated below to discuss any outstanding issues relating to the allowability of the application.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, please charge any deficiency to Deposit Account No. 14/1270, under Docket No. US030159US2.

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Respectfully submitted,



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